

Serial No. 10/017,249

2

PD-201007

In The Claims:

1. (Currently Amended) A mobile communication system comprising:
a first user terminal;
a plurality of stratospheric platforms in communication with said first user terminal to transfer a plurality of communication signals therebetween;
a gateway station in communication with said plurality of stratospheric platforms for transferring said plurality of communication signals therebetween; and
a processing center in communication with said gateway station, said processing center determining a polystatic triangulation position for said first user terminal and redirecting a ~~satellite~~ stratospheric platform beam in response to said determined position of said first user terminal.

2. (Original) The system as recited in claim 1, further comprising:
a customer network in communication with said processing center, said customer network relaying communication signals between said first user terminal and a second user terminal.

3. (Original) The system as recited in claim 2, further comprising:
a center network in communication with said processing center, said center network transferring said plurality of communication signals between said first user terminal and an Internet.

4. (Original) The system as recited in claim 1, wherein the mobile communication system is configured such that all of said plurality of communication signals are aggregated at said gateway station.

5. (Original) A mobile communication system comprising:
a stratospheric platform having stratospheric platform operations, including creating a plurality of beams within a coverage area, a first beam being directed to at least one

Serial No. 10/017,249

3

PD-201007

user terminal at a first microcell and a plurality of additional beams illuminating microcells immediately adjacent said first microcell;

a gateway station transmitting a first ranging signal and a third ranging signal to said at least one user terminal via a first platform, having a first known location and transmitting a second ranging signal and a fourth ranging signal to said at least one user terminal via a second platform having a second known location;

said at least one user terminal retransmitting said first ranging signal and said third ranging signal back to said gateway station via said first platform and retransmitting said second ranging signal and said fourth ranging signal back to said gateway station via a third platform, having a third known location; and

a processing center in communication with said gateway station determining a first, a second, a third, and a fourth delay corresponding to time differences between transmission and receipt of said first ranging signal, said second ranging signal, said third ranging signal, and said fourth ranging signal respectively;

said processing center determining a first position of said user terminal in response to said first known location, said second known location, and said third known location as well as said first delay and said second delay;

said processing center determining a second position, different from said first position, in response to said first known location, said second known location, and said third known location as well as said third delay and said fourth delay, thereby determining movement of said at least one user terminal;

said processing center signaling said stratospheric platform via said gateway station to redirect said first beam from said first microcell to a second microcell, in response to said movement.

6. (Original) The system as recited in claim 5, wherein said first beam is redirected from said first microcell to a second microcell, which is located adjacent to and different from said first microcell.

7. (Original) The system as recited in claim 5, further comprising:

Serial No. 10/017,249

4

PD-201007

a customer network in communication with said processing center, said customer network relaying communication signals between a plurality of user terminals.

8. (Original) The system as recited in claim 5, further comprising:
a center network in communication with said processing network.

9. (Original) The system as recited in claim 8, wherein said center network is in communication with an Internet or Intranet.

10. (Original) The system as recited in claim 5, wherein said stratospheric platforms are replaced by a first satellite, a second satellite, or a third satellite, which perform the respective satellites operations in addition to said stratospheric platform operations.

11. (Original) The system as recited in claim 5, wherein said processing center measures the strength of a signal received from said at least one user terminal and signals said stratospheric platform to redirect said first beam from said first microcell to a second microcell, in response to said signal received.

12. (Original) The system as recited in claim 5, wherein the mobile communication system is configured such that all communication signals are aggregated at said gateway station.

13. (Currently Amended) A method of determining a position of at least one user terminal within a mobile communication system, which includes a plurality of satellites stratospheric platforms having known locations respectively and a gateway station, said method comprising:

transmitting and receiving a plurality of communication signals between said plurality of satellites stratospheric platforms and said at least one user terminal;

transmitting and receiving said plurality of communication signals between said plurality of satellites stratospheric platforms and a gateway station;

Serial No. 10/017,249

5

PD-201007

determining a position of said at least one user terminal through the use of polystatic triangulation;

redirecting a beam of a satellite stratospheric platform in response to said determined position of said at least one user terminal.

14. (Original) The method as recited in claim 13, further comprising:
transmitting and receiving said plurality of communication signals to and from a customer network.

15. (Original) The method as recited in claim 13, further comprising:
transmitting and receiving said plurality of communication signals to and from a center network.

16. (Original) A method of determining a position of at least one user terminal within a mobile communication system, which includes a first, a second, and a third satellite having a first, a second, and a third known location respectively, said method comprising:

creating a plurality of beams within a coverage area, a first beam directed at the at least one user terminal in a first microcell and a plurality of additional beams illuminating microcells immediately adjacent said first microcell;

transmitting a first ranging signal and a third ranging signal to the at least one user terminal via the first satellite;

transmitting a second ranging signal and a fourth ranging signal to the at least one user terminal via the second satellite;

retransmitting said first and said third ranging signals back to a gateway station via said first satellite;

retransmitting said second and said fourth ranging signals back to said gateway station via a third satellite;

determining a first delay, a second delay, a third delay, and a fourth delay corresponding to time differences between transmission and receipt of said first ranging

Serial No. 10/017,249

6

PD-201007

signal, said second ranging signal, said third ranging signal, and said fourth ranging signal respectively;

determining a first position of the at least one user terminal in response to said first known location, said second known location, and said third known location and said first delay and said second delay;

determining a second position of the at least one user terminal in response to said first known location, said second known location, and said third known location and said third delay and said fourth delay;

determining movement of the at least one user terminal in response to said first position and said second position; and

redirecting, in response to said movement, said first beam from said first microcell to a second microcell.

17. (Original) The method as recited in claim 16, further comprising:
relaying communication signals between a plurality of user terminals.

18. (Original) The method as recited in claim 16, further comprising:
transferring communication signals between said plurality of user terminals
and an Internet or intranet connection

19. (Original) The method as recited in claim 16, further comprising:
a gateway station in communication with each of said first satellite said second
satellite, and said third satellite.

20. (Original) The method as recited in claim 16, further comprising:
a stratospheric platform for creating said plurality of beams.